THE MINISTER OF STATE OF THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (SHRI M. KANNAPPAN): (a) The generating capacity in Karnataka from renewable/non-conventional energy sources is 327 MW.

(b) No, Sir.

(c) Central Financial Assistance in the form of capital subsidy and interest subsidy is provided to Small Hydro, Biomass Power, and Bagasse Co-generation projects, depending upon the type of project. Central Financial Assistance is also provided for demonstration wind power projects.

**Use of Geographic Information Systems, Geo-Positioning Systems and Remote Sensing**

2584. SHRI K. RAMA MOHANA RAO:
SHRI RUMANDLA RAMACHANDRAIAH:

Will the Minister of POWER be pleased to state:

(a) how the Ministry is using Geographic Information Systems, Geo-positioning Systems and Remote Sensing to improve the distribution networks, restoration of services as well as to harness the hydro power potential in the country to achieve "Power for all by 2012";

(b) how the Ministry is utilizing the IT to help developing solution and solve the problems of power sector;

(c) whether it is a fact that approximately $200 million fresh investment is required for the growth of the sector; and

(d) if so, how the Ministry is thinking of mobilizing such huge amount?

THE MINISTER OF STATE IN THE MINISTRY OF POWER (SHRIMATI JAYAWANTI MEHTA): (a) and (b) The Geographic Information Systems (GIS), Geo-positioning System and Remote Sensing technique could be applied to develop hydro power projects, augmentation of transmission capability and for reforming distribution. In order to quickly identify the projects, which need to

be taken up for development in the next 10-20 years, ranking/pre-feasibility studies have been carried out for 399 schemes (1,07,000 MW). Some of these studies to hydro electirc projects have been conducted by considering details of land use cover, Infrastructure etc. utilizing Satellite Imageries based data obtained from National Remote Sensing Agency (NRSA).

Software for GIS and remote sensing are available in the market for the distribution system network. Utilities are in the process of making use of such software for distribution system.

Information Technology (IT) is used in Power System Planning for carrying out Load Flow Studies, Short Circuit Studies, Stability Studies and Electromagnetic Transient Phenomena studies. On the basis of these studies, the performance for the power system is simulated and the most optimum solutions for transmission system expansion and/or augmentation are formulated.

(c) and (d) To meet the demand during 10th and 11th Plan, an incremental capacity around 1,00,000 MW would be required for which investments to the tune of Rs. 8 lakh crore (US$200 Billion) approximate are required which will take into account the cost for associated transmission and distribution system for this capacity addition. The investment needs would be met through budgetary support, market borrowings (both domestic and external), retained earnings, suppliers' credit and financing through bilateral and multilateral agencies.

**Recovery of Arrears from SEBs**

2585. SHRI RUMANDLA RAMACHANDRAIAH: Will the Minister of POWER be pleased to state:

(a) whether the Power Ministry has issued warning that the states which fail to pay for the power supplied by Central Utilities would face recovery of arrrears through a cut in Central Plan assistance and other allocations;

(b) wheather the Union Government is proposing a tripartite agreement between the Union Government, State Government and the Reserve Bank of India in this regard; and